

## Appendix A

### Certificate of the Secretary of EOEEA (MEPA) on the Single Environmental Impact Report for the Town of Orleans Comprehensive Wastewater Management Plan

(January 28, 2011)



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January 28, 2011

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS  
ON THE  
SINGLE ENVIRONMENTAL IMPACT REPORT

PROJECT NAME : Town of Orleans Comprehensive Wastewater  
Management Plan  
PROJECT MUNICIPALITY : Town of Orleans  
PROJECT WATERSHED : Cape and Islands  
EOEA NUMBER : 14414  
PROJECT PROPONENT : Town of Orleans  
DATE NOTICED IN MONITOR : December 22, 2010

As Secretary of Energy and Environmental Affairs, I hereby determine that the Single Environmental Impact Report (SEIR) submitted on this project **adequately and properly complies** with the Massachusetts Environmental Policy Act (M.G.L. c. 30, ss. 61-62I) and with its implementing regulations (301 CMR 11.00).

The comments I have received on the SEIR from MassDEP, the Cape Cod Commission (CCC) and others indicate that since the Secretary's issuance of the Certificate on the Expanded Environmental Notification Form (EENF), the Town of Orleans (the Town) has worked closely with MassDEP and CCC to provide additional information to address the comments raised on the EENF pertaining to water quality monitoring at the Orleans Wastewater Treatment Facility (Orleans WWTF) site, the Town's Adaptive Management Plan (AMP) and the project's potential impacts to coastal resource areas. I commend the Town on its continued coordination and outreach efforts in this regard. As a consequence of these efforts, MassDEP, CCC, the Pleasant Bay Resource Management Alliance and others have indicated their strong support for the Town's Comprehensive Wastewater Management Plan (CWMP).

I have received a number of comments on the SEIR that express continuing concerns regarding the Town's proposed centralized sewer system design, potential impacts to the

Namskaket Marsh embayment from the groundwater discharge at the Tri-Town site, and the Total Maximum Daily Loads (TMDLs) established for the coastal embayments surrounding the Town of Orleans.

I have fully considered all of the comments received on the EENF and the SEIR and, on balance, I am convinced that the Town has satisfactorily evaluated the project's potential environmental impacts and committed to an appropriate package of mitigation commitments. While I acknowledge the remaining concerns of a number of residents from the Town of Orleans and neighboring Cape Cod communities, I am confident that these concerns can be adequately addressed during the state and local permitting process and through the implementation of the Town's Adaptive Management Plan. Towards that end, I am directing the Town to continue the same high-level of coordination and cooperation with state, regional and local officials that it has shown throughout the MEPA review process for this project as the project proceeds to permitting.

Thus, after careful review of the SEIR and comment letters, and after consultation with MassDEP, the Cape Cod Commission and others, I believe that the SEIR has addressed the substantive issues outlined in the scope and has demonstrated to MEPA's and the permitting agencies' satisfaction that the Town of Orleans has avoided, minimized, and mitigated impacts to the maximum extent feasible. The project may proceed to state permitting where I expect that MassDEP will continue to scrutinize potential project impacts and require additional mitigation where appropriate.

### Project Overview

The Orleans CWMP calls for the phased construction of a new centralized municipal sewer system and implementation of non-structural program elements to achieve significant reductions of nitrogen loading and meet TMDL limits for the coastal embayments surrounding the Town of Orleans over a 20-year phased project construction period.

The Town of Orleans' CWMP includes:

- Orleans WWTF

Constructing a new centralized wastewater treatment and disposal facility to be located at the existing 26-acre Tri-Town Septage Treatment facility site in Orleans capable of achieving effluent concentration limits of 3-5 mg/L for total nitrogen (TN) with an initial designed capacity to treat and dispose up to 0.64 million gallons per day (MGD) of wastewater flows;

- Core Program Sewers

Constructing approximately 74 miles of new municipal sewer pipe, and approximately 63 sewer pump stations in 6 construction phases to collect and convey approximately 0.64 MGD of wastewater flows from 2,800 individual properties located in the Pleasant Bay, Nauset and Rock Harbor watersheds for treatment and on-site disposal at the Orleans WWTF;

- Non Structural Program Elements

Implementing non-structural program elements to provide additional reductions in nutrient loading within the embayments surrounding Orleans including: fertilizer use controls, stormwater management controls, water conservation measures and enhancement of embayment flushing;

- Adaptive Management Plan

Employing an Adaptive Management Plan that establishes a process for identifying measurable reductions in nitrogen loading; compliance with TMDLs for the coastal embayments surrounding Orleans; and the need for any adjustments or mid-course revisions to the Orleans CWMP prior to constructing the later Core Program phases; and,

- Regional Wastewater Management Opportunities

The Town's Final CWMP has been designed to also accommodate potential additional future wastewater flows from the neighboring towns of Eastham and/or Brewster (Regional Program).

### MEPA Review History

In May 2009, the Town of Orleans (the Town), in accordance with Section 11.05(7) of the MEPA regulations, submitted an EENF with a request that the Secretary allow the Proponent to fulfill its EIR obligations under MEPA with a Single EIR, rather than the usual process of a Draft and Final EIR. The EENF received an extended comment period pursuant to Section 11.06(8) of the MEPA regulations and the Town voluntarily extended the comment period an additional four weeks. The EENF included clear descriptions of the project, a description of the extensive planning and alternatives analysis conducted to date, identified potential environmental impacts associated with the project and provided initial commitments to mitigate impacts. Comments received from MassDEP, the Cape Cod Commission (CCC) and others indicated overwhelming support for the analysis and conclusions included in the EENF and its consistency with legal

requirements. In July 2009, the Secretary issued a Certificate on the EENF and based on a review of the EENF and after consultation with state agencies, determined that the EENF met the regulatory requirements and permitted the Proponent to file a SEIR in fulfillment of Section 11.03 of the MEPA regulations.

### State Permits and Jurisdiction

The project is undergoing review pursuant to Sections 11.03(5)(a)(3) and (5)(b)(1) of the MEPA regulations, because the project will likely involve the construction of sewer mains ten or more miles in length and the development of a new wastewater treatment facility with a capacity of more than 1,000,000 gallons per day. The project will require a Groundwater Discharge Permit, a Chapter 91 License, and a 401 Water Quality Certificate from MassDEP. The project must be reviewed by the Natural Heritage Endangered Species Program (NHESP) and the Massachusetts Historical Commission (MHC) because portions of the project occur within Priority Habitat and within or adjacent to recorded archaeological sites and archaeologically sensitive areas, respectively. The project may require a Conservation and Management Permit from NHESP. It may require Federal Consistency Review with the Massachusetts Coastal Zone Management (MCZM) Office. It may also require a Construction Access Permit from the Massachusetts Highway Department. The project may need to obtain a Section 404 Permit from the U.S. Army Corps of Engineers. The project should comply with the National Pollutant Discharge Elimination System (NPDES) General Permit for stormwater discharges from a construction site. It will also require an Order of Conditions from the Orleans Conservation Commission and on appeal only, a Superseding Order of Conditions from MassDEP.

The Town anticipates applying for State Revolving Fund (SRF) loans for subsequent planning and construction of proposed sewer project. Therefore, MEPA jurisdiction is broad and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

## REVIEW OF THE SINGLE ENVIRONMENTAL IMPACT REPORT and FINAL CWMP

### Project Description

The SEIR includes a detailed discussion of the findings of the Massachusetts Estuaries Project (MEP) Technical Reports and/or TMDLs established for Pleasant Bay, Rock Harbor, Namskaket and Little Namskaket embayments used by the Town in the design of the Orleans

CWMP. The SEIR provides additional information to satisfactorily demonstrate that the Tri-Town site is an acceptable effluent recharge site that could accommodate the treatment and on-site discharge of the Core Program's estimated wastewater flows. The SEIR provides a detailed description of the Town's proposed Adaptive Management Plan and its water quality monitoring program for the Tri-Town site and the coastal embayments surrounding the Town of Orleans. The SEIR identifies significant environmental benefits and impacts, and measures that will be taken to avoid, minimize and mitigate the Core Program sewer project's unavoidable impacts to environmental resource areas. The SEIR includes a proposed schedule for completing the final design and environmental permitting for the Orleans CWMP and each phase of its sewer construction program. The SEIR includes additional information and maps identifying the areas in Orleans where construction of new sewers or cluster systems are proposed and the locations where sewer lines, pumping stations, and other facilities will be located.

### Structural Program Elements

#### *Core Sewer Program*

The Town's core sewer construction plan (Core Program) involves the phased construction of new sewers to eliminate septic systems in areas of Orleans having the greatest need for nitrogen control and located upgradient of nitrogen sensitive watersheds and major freshwater ponds. As described in the SEIR, the Core program's sewer service area was designed to provide for the collection of as much wastewater nitrogen as necessary using the least amount of wastewater collection and conveyance infrastructure.

The Core Program includes the construction of a new centralized wastewater treatment facility (Orleans WWTF) to be located at the existing 26-acre Tri-Town Septage Treatment facility located near the intersection of Route 6 and Route 6A at 29 Overland Way in Orleans. The new Orleans WWTF is designed with an initial capacity to treat and dispose up to 0.64 MGD and will employ a 4-stage Bardenpho nitrogen removal process that will provide treatment levels capable of achieving nitrogen effluent concentrations of 3-5 milligrams per liter (mg/l) of total effluent Nitrogen (Level 2 nitrogen limits) and the removal of numerous pathogenic organisms. Under the Core Program, a total of approximately 74 miles of new municipal sewer pipe, and approximately 63 sewer pump stations will be constructed in 6 construction phases to collect and convey 2030 design year wastewater flows (approximately 0.64 MGD) from 2,800 individual properties (approximately 53% percent of the Town) located in the Pleasant Bay, Nauset and Rock Harbor watersheds for treatment and on-site disposal at the Orleans WWTF site. Construction of Phase 1 of the Core Program is expected to be completed in 2017 and will include the construction of the new Orleans WWTF (to operate at 50% design capacity) and approximately 15 miles of new sewers and 7 pump stations located primarily throughout the downtown area of Orleans.

Phase II of the Core Program will include the construction of approximately 11 miles of sewers and 10 pump stations. Phase 2 will also involve the construction of five separate below-ground cluster wastewater treatment systems with approximately 11 miles of additional gravity sewers and new pump stations to serve neighborhoods located in the watersheds of four impacted coastal embayments and one freshwater pond including the headwaters of the Paw Wah Pond, Lonnie's Pond, Arey's Pond, Mill Pond and Baker's Pond, respectively. As described in the SEIR, these cluster systems will provide interim nitrogen and phosphorous removal to these impacted surface water bodies in the early phases (Phases 1 and 2) of Core Program construction and many years in advance of the construction of the later phases of Core Program construction for these areas of Orleans. The Town proposes to eventually convert and incorporate these cluster wastewater treatment systems to serve as pump stations for the Core Program municipal sewer system. The Town anticipates that the Phase 2 sewer construction work will be completed in 2020. Construction of the remaining Core Program phases (Phases 3-6) is anticipated to be completed in 2032.

#### Septage Handling Facility

The Orleans WWTF will include facilities for a new septage receiving and handling station to replace the existing Tri-Town Septage Treatment Facility and will be designed to receive, treat and dispose of truck-transported septage from non-sewered areas in Orleans together with septage from the other Tri-Town District communities of Brewster and Eastham.

#### Sludge Handling Facility

The Orleans WWTF will also include new facilities for preparing remaining sludge materials resulting from the wastewater treatment and septage handling processes for off-site trucking for suitable reuse and disposal.

#### Non Structural Program Elements

The Orleans CWMP also calls for the implementation of a number of cost-effective non-structural elements designed to provide measurable reductions in nitrogen loading to the embayments surrounding Orleans such as fertilizer management, stormwater management, enhanced embayment flushing and land use controls.

According to the information provided in the SEIR, fertilizer use and stormwater runoff can contribute up to 7% and 8% of watershed nitrogen load to coastal embayments in Orleans, respectively. The Town has committed to implement fertilizer use controls to reduce the use of fertilizer products on lawns, gardens and agricultural areas in Orleans. The Town has also committed to adopting stormwater management regulations to reduce nutrient loading from surface runoff to embayments surrounding Orleans, and to pilot the potential use of enhanced

embayment flushing to increase the assimilative capacity of coastal embayments to reduce nitrogen loading by increasing their flushing rates. MassDEP has indicated that some of these non-structural program elements may hold promise for reducing nutrient loading to coastal embayments but will require an extensive evaluation by MassDEP to determine if an acceptable nitrogen reduction credit can be applied in the Orleans CWMP.

## Water Quality and Wastewater Treatment

### *Marine Embayments*

The SEIR includes a detailed discussion of the findings of the MEP Technical Reports and/or TMDLs established for Pleasant Bay, Rock Harbor, Namskaket and Little Namskaket embayments used by the Town in the design of the Final Orleans CWMP. The Town has continued to participate in MEP's efforts to conduct water quality sampling and identify nutrient loading problems for the Town's coastal embayments. The Technical Reports produced by the MEP are used by MassDEP and the US Environmental Protection Agency (EPA) to establish Total Maximum Daily Loads (TMDLs) for nitrogen loading to these coastal embayments and their tributaries. The MEP has provided Technical Reports for Pleasant Bay and the Northside Cape Cod Bay embayments of Rock Harbor, Namskaket and Little Namskaket Creek. The final MEP Technical Report for Nauset Marsh has been delayed. MassDEP and EPA have established TMDLs for Pleasant Bay and its coastal tributaries.

The TMDLs for the Northside Cape Cod Bay embayments has not yet been released. As described in the SEIR and the comments received from CCC, the Town incorporated information from the draft MEP Technical Report findings for Nauset Marsh in the Town's final design of the Orleans CWMP. Specifically, the Orleans CWMP includes a conservative target percentage (55%) nitrogen removal for Nauset Marsh. CCC supports the Town's interim use of this nitrogen removal estimate for Nauset Marsh. According to the comments received from MassDEP and CCC, the estimated nitrogen loading reductions resulting from the Town's phased construction of the Core Program are consistent with published or expected TMDLs for the watersheds and embayments surrounding the Town of Orleans. As a condition of its approval of the Orleans CWMP project, CCC will require the Town to review the final MEP Report for Nauset Marsh when it becomes available to determine what if any revisions to the Orleans CWMP may be needed to address nutrient loading and water quality issues affecting the Nauset Marsh/Town Cove embayment.

MassDEP and CCC have requested that the Town provide confirmatory modeling results using the Linked Water Quality Model to identify estimated reductions in nitrogen loading and interim water quality improvements associated with each phase of the Town's Core Program sewer construction program. The Town will be required to complete the confirmatory modeling



for the Orleans CWMP as a condition of MassDEP's Groundwater Discharge Permit and CCC's Development of Regional Impact (DRI) approval process. MassDEP's comments on the SEIR identified the need for additional water quality modeling at the Little Naskaket Marsh and renewed monitoring and characterization of the Tri-Town plume. According to MassDEP comments, the wastewater plume from the Tri-Town site was last monitored in 2001 by the USGS and determined to be moving in a northwesterly direction. MassDEP has indicated that the Town will be required to fully characterize the plume's direction and extend of its leading edge as part of the Town's ongoing water quality monitoring program responsibilities. Studies of the Tri-Town wastewater plume and their findings will be made part of the Adaptive Management Plan and included in the Town's annual TMDL Compliance Report described below.

### *Freshwater Ponds*

As described in the SEIR, Phase 2 work will include the construction of five separate below-ground cluster wastewater treatment systems with approximately 11 miles of additional gravity sewers and pump stations to serve neighborhoods located in the headwaters of the watersheds for four impacted coastal embayments and one freshwater pond including Paw Wah Pond, Lonnie's Pond, Arey's Pond, Mill Pond and Baker's Pond, respectively. Each of the five cluster wastewater treatment systems will have a design capacity to accommodate approximately 10,000 – 20,000 gpd of wastewater flow (15 – 30 properties) to achieve an effluent nitrogen concentration of 5- 8 mg/L. These cluster systems will provide interim nitrogen and phosphorous removal to these impacted surface water bodies in the early phases (Phases 1 and 2) of Core Program construction and many years in advance of the construction of the later Core Program sewer phases in these areas of Orleans. The Town proposes to eventually convert and incorporate these cluster wastewater treatment systems to serve as pump stations for the Core Program municipal sewer system. The Phase 2 sewer construction work is expected to be completed in 2018. Construction of the remaining Core Program phases (Phases 3-6) is anticipated to be completed by 2030.

In comments previously submitted on the EENF, CCC recommended that the Town consider constructing an interim cluster wastewater collection and treatment system to serve the neighborhoods located in the headwaters of for Cedar Pond area as part of the Town's Phase 1 Core Program work. According to the information provided in the SEIR, factors contributing to the impairment of Cedar Pond have not yet been adequately identified. The Town has committed to review the forthcoming amended MEP Report for Rock Harbor when it becomes available to re-evaluate the need for constructing a cluster sewer system to serve the Cedar Pond neighborhoods.

*Orleans Wastewater Treatment Facility*

The proposed Orleans WWTF will have an initial design capacity of 0.64 MGD and will employ a 4-stage Bardenpho nitrogen removal process that will achieve nitrogen effluent concentrations of 3-5 milligrams per liter (mg/l) of total effluent Nitrogen. Treated wastewater effluent will be discharged to 10 rapid infiltration beds. The Town completed a review of existing hydrogeological studies, hydraulic load testing and other groundwater modeling analyses and determined that the Tri-Town site has an effluent disposal capacity (approximately 1.78 mgd) to accommodate the Core Program's wastewater flows. As discussed below, the Orleans WWTF is designed with reserve treatment capacity to accommodate the treatment of potential future additional wastewater flows anticipated from sewerage the entire Town of Orleans under the Town's Expanded Program design. According to the information provided in the SEIR, under the Extended Program, a total of 1.14 MGD of wastewater flow will be collected from 5,300 individual properties for treatment at the Orleans WWTF. According to the Town, construction of the Extended Program would require an additional 15-20 years from the completion of the Core Program sewer construction work.

The treatment and on-site disposal of the Core Program's wastewater flows will utilize approximately 60% of the infiltration system's capacity. The disposal of treated effluent under the Regional Program would utilize approximately 90% of the infiltration system's discharge capacity. The disposal of treated effluent under the Town's Extended Program would exceed the infiltration system's capacity and require one or more additional off-site groundwater disposal sites or water reuse options.

As described in the SEIR, approximately 67% of the treated wastewater effluent from the Tri-Town site will discharge to Namskaket Marsh, 9% will discharge to Little Namskaket Marsh and approximately 25% will discharge to Cape Cod Bay. The MEP Reports for the Namskaket and Little Namskaket Marsh systems indicate that these embayments have adequate assimilative capacity to prevent nitrogen overloading from the discharge of the Core Program's treated wastewater flows. The Town has concluded that the disposal of treated effluent from the Orleans WWTF will not impact local groundwater and surface water resources including existing water table mound heights and nutrient loading to both the Namskaket Marsh and Little Namskaket Marsh. The Town has committed to monitor groundwater resources around the periphery and down gradient of the Orleans WWTF site to identify any impacts on groundwater resources and coastal embayments surrounding the Town of Orleans. According to the comments received from MassDEP, this groundwater monitoring commitment will be incorporated into MassDEP's Groundwater Discharge Permit for the Orleans WWTF. CCC has indicated that the Town will be required to conduct groundwater monitoring of the Tri-Town site as part of the Town's Adaptive Management Plan as a condition of CCC's DRI approval process.

### Adaptive Management Plan (AMP)

The Orleans CWMP contains an AMP that identifies a systematic process for determining the effectiveness of the early phases of Core Program construction and the need for any revisions to the Orleans CWMP before initiating later Core Program construction phases. The AMP includes a Groundwater and Surface Water Quality Monitoring Plan that identifies specific annual water quality monitoring activities to be completed by the Town for the Tri-Town Site area, sensitive coastal embayments and select freshwater ponds in Orleans. The AMP requires the Town to coordinate its ongoing water quality monitoring activities with MassDEP, CCC, and the ongoing water quality monitoring and modeling activities in Orleans being carried out by MEP, the United States Geological Survey (USGS), the Pleasant Bay Alliance, the Orleans Ponds Coalition and the Orleans Marine and Fresh Water Quality Task Force.

The AMP also requires the Town to prepare an annual TMDL Compliance Report to document the reductions in watershed nitrogen loads achieved from the Town's phased sewer construction program. MassDEP will review the TMDL Compliance Report to determine the Town's compliance with the established TDMLs included in the Orleans CWMP. The TMDL Compliance Report will also be used to identify the need to make any adjustments or mid-course corrections to the Orleans CWMP prior to initiating the next phase of project construction. The annual TMDL Compliance Report will be distributed to MassDEP, CCC, MEP, local area watershed associations and representatives from neighboring towns.

Comments received from the Sierra Club, Clean Water Action and others have requested that the Orleans CWMP incorporate a monitoring program to identify the presence of contaminants of emerging concern (CECs) in wastewater flows and effluent discharges at the Orleans WWTF. According to MassDEP, no regulations or policies are in place to govern the monitoring or treatment of CECs at WWTFs as this issue is currently being studied by MassDEP, the US Environmental Protection Agency (EPA) and others. MassDEP has indicated that when such CEC policies and regulations are established, they could be included in the Town's AMP for the Orleans CWMP. I ask that the Town work closely with MassDEP to ensure that the final design of the Orleans WWTF may be modified in the future to accommodate potential future opportunities for CEC monitoring and treatment.

### Wetlands and Waterways

Most of Orleans' proposed Core Program sewer construction project is located within existing roadway right-of-ways. According to the information provided in the SEIR, the Town's sewer project will not directly impact BVW resources. The Town has indicated that the Core Program sewer line routes and/or pumping station locations may encroach in the 100-foot buffers

of regulated wetland resource areas and result in impacts to wetland buffer zone area. Prior to construction of projects within the resource area buffer zones, the Town will apply for wetlands related permits, in accordance with MassDEP and the Orleans Conservation Commission regulations. I anticipate that the Town will continue to examine alternatives that avoid impacts to wetland resource areas, their associated buffer zones, riverfront protection areas, and 100-year flood plain areas during permit review.

According to the SEIR, the Core program construction activities will not be located within tidelands and will not require a Chapter 91 License from MassDEP. The project may be revised as it advances to final design and permitting. In the event the project undergoes further revisions that result in the alterations to tidelands, the Town will need to contact the MEPA Office to determine if further MEPA review is required to address impacts to waterways and tidelands and if a Public Benefits Determination will be required.

### Rare Species

As described in the SEIR, the Tri-Town Septage Treatment Facility site, is located within Priority Habitat for the Eastern Box Turtle (*Terrapene carolina*), the Diamond-backed Terrapin (*Malaclemys terrapin*), Salt Reedgrass (*Spartina cynosuroides*) and Mitchell's Sedge (*Carex mitchelliana*). According to NHESP's previous comments on the EENF, the construction of the Orleans WWTF will occur within mapped habitat for the Eastern Box Turtle (*Terrapene carolina*). The Town, in consultation with NHESP, completed an evaluation of alternative site layouts for the Orleans WWTF facility. The SEIR includes a detailed description of the Town's revised site layout for the Orleans WWTF that locates the facility's rapid infiltration beds to the northern most portion of the site and maximize the reuse of existing disturbed areas and septage facility infrastructure for wastewater treatment. According to the Town, the revised site layout will result in the permanent alteration of approximately 4.9 acres of on-site habitat and will avoid fragmentation of undisturbed habitat areas within the proposed Orleans WWTF site to avoid a 'take' of the Eastern Box Turtle. NHESP's comments on the SEIR indicate that the construction of the Orleans WWTF will create temporary disturbances from site grading and may result in more than 5 acres of impact to mapped habitat for the Eastern Box Turtle. NHESP anticipates that the Town may be able to further reduce the projects temporary impacts to habitat by revising the project's proposed site grading and re-vegetation plans.

I ask that the Town continue to work closely with NHESP and consult with the Orleans Conservation Commission during the final CWMP project design and for each phase of Core Program construction to identify necessary construction and post-construction conditions and commitments to avoid adverse impacts to resource area habitats for state-listed species that may be located within and adjacent to the Orleans WWTF site, the five local cluster system project sites and the Core program sewer collection area.

### Historical/Archeological Resources

As described in the SEIR, portions of the Core Program's sewer construction work are located within the Old King's Highway Regional Historical District (OKHRHD). The Town has committed to design and construct above ground sewer pump stations located within the OKHRHD with appropriate architectural features consistent with OKHRHD standards. According to the Town, the proposed cluster wastewater treatment systems may also be located within or adjacent to areas where archaeological resources may be present. The Town has committed to complete a reconnaissance archeological survey for each of these cluster site locations. MHC recommends that the Town submit to MHC for review and comment detailed project plans for Core Program construction phase as they may become available. Detailed project plans for Core Program construction phase should also be submitted to the OKHRHD for review and comment. I ask that the Town continue to work closely with MHC during final project design and prior to each successive sewer construction phase to identify opportunities to avoid, minimize and mitigate project construction impacts to historic and archeological resources in the project area.

### Greenhouse Gas Emissions (GHG)

The project requires an EIR and therefore is subject to the requirements of the MEPA Greenhouse Gas Emissions Policy and Protocol ("the Policy"): <http://www.mass.gov/envir/mepa/downloads/GHGPolicyRev1108.pdf>. The policy requires project proponents to quantify the direct and indirect CO<sub>2</sub> emissions from the proposed project, including CO<sub>2</sub> emissions associated with the buildings & plant operations, and to compare those emissions to a project baseline, which includes no-build conditions as well as an assessment of the emissions associated with the current effective building code ("base case").

In this instance, the Town consulted with MassDEP, DOER and EPA and developed a "base case WWTF" using GHG emissions data obtained from EPA's Energy Star Portfolio Manager database for comparable WWTFs having similarly sized treatment capacities, wastewater nutrient loads and seasonal demand fluctuations. The Town's estimated GHG emissions for the Base Case WWTF is approximately 900 tons of carbon dioxide per year (CO<sub>2</sub>/yr). The SEIR presented an evaluation of 20 GHG reduction mitigation measures associated with wastewater treatment processing, building systems and facility operation and management. The Town has committed to incorporate a number of GHG reduction measures related to Building and Process systems for the Orleans WWTF that will result in a reduction of approximately 64 tons CO<sub>2</sub>/yr from the Base Case WWTF, a reduction of approximately 6 percent. Comments received from the Department of Energy Resources (DOER) indicate that even greater reductions may be achieved by through the use of alternative nitrogen demand technology. I encourage the Town to

consider DOER's comments. The Town also identified 11 additional GHG reduction measures including the use of on-site renewable energy (solar photovoltaic (PV), Wind Turbine) that the Town has committed to further explore during final design of the Orleans WWTF. As described in the SEIR, these 11 additional GHG reduction measures could result in a reduction of approximately 309 tons CO<sub>2</sub>/yr (34.3%) from the Base Case WWTF. The Town should commit to continue to work closely with MassDEP and DOER during final WWTF design and permitting to identify and incorporate appropriate energy efficiency measures into the buildings, treatment processes and operations for the Orleans WWTF. MassDEP has indicated that it will work with the Town to incorporate these GHG reduction measures through its project financing and permitting authority. Upon completion of the construction of the Orleans WWTF, the Town should provide a certification to the MEPA Office signed by an appropriate professional (e.g., engineer, architect, general contractor) indicating that the all of the GHG mitigation measures committed to by the Town as described in the SEIR and this section of the Certificate that collectively will reduce Building and Process systems GHG Emissions for the proposed project by at least 6 percent have been incorporated into the Orleans WWTF project. This certification should be supported by as-built plans. For those measures that are operational in nature (i.e. TDM, recycling) the Town should provide an updated plan identifying the measures, the schedule for implementation and how progress towards achieving the measures will be obtained. MassDEP should incorporate this self-certification requirement into its Section 61 finding for this project.

### Sewering and Growth Management

The SEIR includes a discussion of potential land use control mechanisms to limit unwanted secondary growth related to the construction of the Town's Core Program sewer project. The Orleans Board of Health adopted its Nutrient Management Regulation in 2008 restricting wastewater flow to 110 gpd per 10,000 sf of lot area for new development or expansion of existing development. The Town is proposing to implement a 'flow-neutral' Sewer Use Regulation to be administered through the Orleans Board of Health, which would limit the redevelopment of existing properties by restricting the amount of additional wastewater flow/nitrogen load from the redeveloped property to the amount of wastewater flow from the property to what is allowed under Title 5 and local zoning. The Town is also proposing to adopt Section 1A of the Chapter 83 of the Massachusetts General Laws to enable the Town to implement a "checkerboard" sewer connection bylaw that will allow the Town to select specific lots that will be connected to the municipal sewer system and lots that do not need sewerage and therefore will not be allowed to connect to the new sewer system. Lastly, the Town is also considering implementing an accelerated program of open space acquisition in nitrogen-sensitive watersheds to avoid the potential nitrogen loads from the future development of these currently undeveloped properties. The Town should adopt and implement any proposed growth by-laws, regulations, and policies prior to the construction of any new sewers.

### Costs to Homeowners

As described in the SEIR/Final CWMP, the Core Program will be constructed in six phases over 15-20 years and will have an estimated capital cost of approximately \$150,000,000. The estimated operation and maintenance (O&M) costs for the Core Program total approximately \$1.4 million dollars. According to the Town, construction of the Expanded Program to extend the new centralized sewer system to the remaining properties located outside of the Core program area will cost an additional \$96,000,000 in capital costs. The Town proposes to recover 80% of the project's municipal debt service through user and non-user property taxation and 20% through betterment assessments to be paid by users of the sewer system. The SEIR provides average cost estimates (capital and O&M) for households connected to the Core Program sewer system (\$2,592.00) and those households not connected to the Core Program sewer system (\$2,544.00). According to the information provided in the SEIR, the proposed Core Program of new sewer construction may qualify for available state and/or federal loan and grant assistance including the State Revolving Fund (SRF) and the US Department of Agriculture's Rural Development Grant program thereby reducing the average cost estimates (capital and O&M) for households connected to the Core Program sewer system from \$2,592.00 to \$1,692.00 and those households not connected to the Core Program sewer system from \$2,544.00 to \$1,965.00.

### Future Sewer Expansion

The Town's Core Program sewer collection system has been designed to accommodate larger wastewater flows associated with the potential future expansion of new sewers to the entire Town of Orleans (Expanded Program) and/or additional wastewater flows from the neighboring towns of Eastham and Brewster (Regional Program).

#### *Expanded Program*

Under the Expanded Program, new sewers would be extended to all of the Town of Orleans and would result in the collection and conveyance of a total of 1.14 MGD of wastewater from 5,300 individual properties for treatment at the Orleans WWTF. As mentioned elsewhere in this Certificate, additional wastewater disposal sites and/or treated effluent reuse options may be required to accommodate the disposal of the Expanded Program wastewater flows.

#### *Regional Program*

The SEIR includes a detailed discussion of potential regional approaches to address the wastewater treatment and disposal needs for the Towns of Orleans, Eastham and Brewster, and the regional issues pertaining to nutrient loading, wastewater treatment and disposal affecting the Nauset Marsh/Town Cove and Pleasant Bay coastal embayments.

According to the comments received from the Town of Eastham, Eastham recently completed its wastewater planning study and identified as its preferred alternative a regional wastewater treatment option with the Town of Orleans involving the conveyance of a portion of Eastham's wastewater flows from the Nauset/Town Cove/Rock Harbor Watersheds to the Orleans WWTF for treatment and disposal. The Town of Eastham has expressed an interest in working with the Town of Orleans to identify opportunities for constructing its sewer connection to the Orleans WWTF in the early phases of Orleans' Core Program construction.

The SEIR identifies a number of options for a regional wastewater treatment approach with the Town of Brewster including the conveyance of a portion of Brewster's wastewater flows from the Pleasant Bay Watershed to the Orleans WWTF for treatment and disposal and/or locating a new satellite WWTF in the Town of Brewster to treat a portion of Orleans' and Brewster' wastewater flows from the Pleasant Bay Watershed. As described in the comments received from the Town of Brewster on the SEIR, Brewster has recently initiated efforts to complete an Integrated Water Resources Management Plan. As part of its planning process, the Town of Brewster has expressed a desire to continue to work with the Town of Orleans, MassDEP and others to address regional water and wastewater management issues affecting their shared watersheds and coastal embayments.

I ask the Towns of Orleans, Eastham and Brewster work closely together with MassDEP and CCC and others including the Pleasant Bay Resource Management Alliance and the Cape Cod Water Protection Collaborative to continue the discussion of possible opportunities to integrate the Town of Orleans' wastewater treatment planning efforts with the water and wastewater management planning efforts being undertaken by the Towns of Eastham and Brewster.

### Construction Impacts

The construction period will be the major source of impacts from the project, including impacts from earth moving, impacts to vegetation, potential impacts from erosion and sedimentation, traffic impacts on adjacent roadways, and impacts to adjacent land uses. Construction period impacts and mitigation measures have been described in the SEIR, including impacts from noise and dust, impacts on trees and other vegetation, and traffic impacts. This section of the SEIR includes a discussion of measures that will be taken by the Town to minimize and mitigate construction period impacts (in particular impacts on sensitive receptors or exceptional resources). Given the availability of Ultra Low Sulfur Diesel (ULSD) fuel and the requirements for off-road engines in 2010, the construction equipment for the project should operate on ULSD fuel to reduce emissions of fine particulate matter. The Town should consult with MassDEP to discuss additional construction period diesel mitigation measures. I strongly encourage the Town to commit to using lower emission equipment in addition to requiring its contractors to retrofit diesel-powered equipment with emissions controls, such as particulate filters or traps, and use low-sulfur diesel fuel. The Town should require its contractors to use



On-Road Low Sulfur Diesel (LSD) fuel in their off-road construction equipment which can increase the removal of particulate matter (PM) by approximately 25% beyond that which can be removed by retrofitting diesel-powered equipment. All construction-related refueling and equipment maintenance activities should be conducted under cover on impervious surface areas with containment, and outside of any wetlands resource areas, endangered species habitat areas, residential areas and wellhead protection areas.

The Town should develop and enforce a spills contingency plan to address potential releases of oil and/or hazardous materials from pre and post construction activities as recommended by MassDEP. To the extent feasible, existing access routes within the ROW will be used for construction access. In areas where access roads do not exist, the Proponent will construct temporary access roads along existing land contours to minimize grading requirements for construction vehicle access. Best Management Practices (BMPs) that will be implemented during construction include the use of swamp mats and erosion control barriers, and a Stormwater Pollution Prevention Plan.

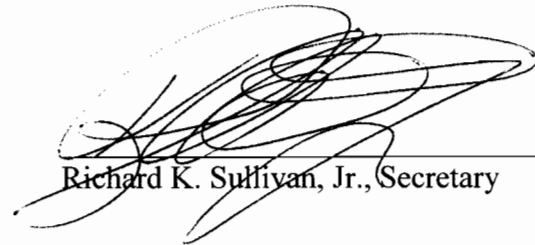
#### Mitigation and Section 61 Findings

The SEIR includes a separate chapter on mitigation measures and proposed Section 61 Findings for all state permits and approvals required for the project. This section of the SEIR provides a description of the Town's proposed mitigation plan, and discusses the value of the proposed mitigation in terms of the resources it provides and the opportunities for open space protection, and active and/or passive recreation it affords. Final Section 61 Findings will be prepared by state agencies issuing permits for this project and will include conditions considered binding upon the Proponent as mitigation commitments. State agencies and the Town should forward final copies of Section 61 Findings to the MEPA Office for the project file and for notice in the Environmental Monitor. I ask the Town to continue to work closely with MassDEP, CCC and the Pleasant Bay Resource Management Alliance to design and implement a sustainable Comprehensive Wastewater Facilities Plan and mitigation plan for the Town of Orleans that will help to offset the proposed project's municipal sewerage impacts.

#### Conclusion

After a thorough consideration of the comments received from MassDEP and others, I am satisfied that any outstanding design issues relating to sewer layout and construction phasing will be fully considered and addressed during state and local permitting. As noted elsewhere in this Certificate, the Town should continue to work closely with MassDEP, NHESP and MHC during final project design.

January 28, 2011  
DATE



Richard K. Sullivan, Jr., Secretary

Comments received:

01/19/11 Division of Marine Resources (DMF)  
01/19/11 Pleasant bay Resource Management Alliance  
01/19/11 Town of Brewster  
01/19/11 Mary Hartley  
01/20/11 Cape Cod Commission (CCC)  
01/20/11 David Farquhar  
01/20/11 Department of Energy Resources (DOER)  
01/20/11 Kevin H. Cassidy  
01/20/11 Beverly M. Carney  
01/21/11 MA Department of Environmental Protection (MassDEP) – SERO  
01/21/11 Sierra Club, Cape Cod and the Islands  
01/21/11 Alan McClennen, Jr. FAICP  
01/21/11 Beverly M. Carney  
01/21/11 Ben A. Buck  
01/21/11 Clean Water Action  
01/21/11 Brian and Judy Embleton  
01/21/11 Victoria L. Reis  
12/22/11 Massachusetts Historical Commission (MHC)  
01/25/11 Town of Eastham  
01/27/11 Natural Heritage & Endangered Species Program (NHESP)

SEIR #14414  
RKS, Jr./NZ/nz